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Deposited in DRO:

06 May 2021

Version of attached file:

Accepted Version

Peer-review status of attached file:

Peer-reviewed

Citation for published item:

Woolley, Olivia (2021) 'Renewable Energy Consumption.', in Essential EU Climate Law: 2nd edition. , pp. 98-129.

Further information on publisher's website:

<https://www.e-elgar.com/shop/gbp/essential-eu-climate-law-9781788971294.html>

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CHAPTER SIX

RENEWABLE ENERGY CONSUMPTION

ABSTRACT

- Promoting the consumption of renewable energy is one of the key means to reduce carbon emissions from electricity production, heating and transportation, while it also improves energy security and contributes to economic growth;
- Repealing the early Directives 2001/77/EC and 2003/30/EC that aimed to promote renewable sources, Directive 2009/28/EC (2009 RES Directive) established a legal framework for increasing the consumption of energy from renewable sources in the EU to 20 per cent of overall energy consumption by 2020. At that time, Member States were given legally binding national targets for achieving specified levels of renewable energy growth;
- The current Directive EU/2018/2001 (2018 RES Directive) requires states to act in solidarity to achieve collectively a target of 32% renewable energy in energy consumption by 2030, but replaces binding national targets with detailed governance arrangements for scrutinising individual contributions of Member States to the Union target;
- The 2018 RES Directive places greater emphasis on cost-effectiveness than the 2009 RES Directive, for instance by requiring support schemes for renewable electricity to give producers market exposure in most circumstances. It also encourages Member States to seek out lower cost options for increasing renewable energy consumption by allowing them to collaborate through cooperation mechanisms;
- The 2019 Electricity Directive (2019/944) and the 2019 Electricity Regulation require Member States and sectoral actors to enable renewable energy integration in networks and markets by reforming rules on their operation and development;
- The 2018 RES Directive requires Member States to promote the use of renewables in energy consumed for transport, whilst preventing this and other sources of demand for bioenergy from giving rise to unsustainable fuel production practices;
- Member States employ support schemes to encourage investment in RES production capacity, but legal questions arise over their compatibility with TFEU provisions concerning the free movement of goods and state aid.

6.1. Introduction

This chapter examines the legal framework established by the EU to promote renewable energy consumption. Its main focus is on the Renewable Energy Directive of 2018 (2018 RES Directive) that was adopted to implement the European Union's target of increasing the proportion of energy from renewable sources in overall energy consumption to at least 32 percent by 2030.¹

Section 6.2 introduces the topic of renewable energy by explaining what this is and why the replacement of fossil fuel energy by energy from renewable sources is promoted by the EU and by many of its Member States. Section 6.3 begins by considering the EU's early development of a policy on renewable energy in the 1990s, and the 2001 Directive on Renewable Electricity and the 2003 Directive on Biofuels that this policy spawned.² It examines the limitations of these early Directives for promoting renewables and their successor, the Renewable Energy Directive of 2009 (2009 RES Directive), which was enacted to provide stronger support for the sector's growth.³ Section 6.4 provides an overview of the various respects in which the 2018 RES Directive that replaces it seeks to promote renewable energy consumption and to address both perceived barriers to this and the potential environmental consequences of a major increase in the consumption of biomass-based energy.

Section 6.5 examines legal issues associated with the provision of financial support for renewable energy by Member States. Parts one and two of this section explain why financial support, whether provided directly from the public sector or by private sector actors acting in accordance with legal direction, is often needed to secure investment in renewable energy. Parts three and four describe the type of schemes that Member States have typically used to provide support. Part five considers the influence that aspects of EU Treaties have had on the take up and design of support schemes by Member States. Section 6.6 concludes.⁴

¹ Directive 2018/2001/EU of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources [2018] OJ L 328/82 (the 2018 RES Directive).

² Council Directive 2001/77/EC of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market [2001] OJ L283/33 (the 2001 Directive); Council Directive 2003/30/EC of 8 May 2003 on the promotion of the use of biofuels or other renewable fuels for transport [2003] OJ L 123/42 (the Biofuels Directive).

³ Council Directive 2009/28/EC of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directive 2001/77/EC and 2003/30/EC [2009] OJ L 140/16 (the 2009 RES Directive).

⁴ Separate laws have been enacted by the EU on the simultaneous production of electricity and heat from renewable energy sources through 'cogeneration', which are considered in chapter [7] of this book. The legal provision that has been made in EU law to address grid access challenges for renewable electricity is considered in Chapter [10]. Chapter [3] examines the extent to which the overarching principles of EU climate policy are honoured in the EU ETS Directive and what balance has been struck between them.

6.2. Basics of renewable energy

6.2.1 What is renewable energy?

The term 'renewable' is used to describe energy derived from sources that are replenished at the same rate as they are used. This is in contrast to fossil fuels, the consumption of which reduces the stock available for future generations. The principal sources of renewable energy are the sun, the wind, waves, tides, tidal currents, geothermal energy and organic matter (biomass). The majority of these sources are the product, either directly or indirectly, of energy from the sun. The exceptions to this are tidal and geothermal energy which are derived respectively from the gravitational effect of the moon and from the heat of the Earth's interior. Most of these sources are fully renewable, but biomass and geothermal are only renewable to the extent that consumption does not exceed the capacity of the Earth and its interior to replace them. Technologies have been developed to produce energy from all of these sources. Some of the technologies are well-established and widely used for commercial energy production (for example, wind and solar energy) whilst others are at an earlier stage of development (for example, wave and tidal current energy).⁵

Renewable sources can be used to meet demands for energy for electricity production, heating and transportation. Electricity can be generated from solar energy (including through photovoltaic (PV) units), through the release of water stored behind dams (hydropower and tidal barriers), and through turbines driven by wind, wave and tidal currents and by the burning of biomass. In addition to meeting current demand for services such as lighting, renewable electricity is expected to have a growing role in providing energy for heating and transportation if fossil fuel consumed for these purposes is to be replaced by lower carbon alternatives. Energy for heating can be attained directly from the sun, including through its heating of the air and water, from the burning of biomass and gases derived from them in boilers, from the capture of heat produced as a by-product of electricity generated from renewable sources in combined heat and power units, and through tapping geothermal energy. Fuels derived from a wide variety of biomass feedstocks, and from organic waste can be used to power road, marine and air transportation.

A common characteristic of most renewable sources is that carbon dioxide is not emitted during the production of energy from them. The exception to this is biomass which is described as a 'carbon neutral' energy source because carbon dioxide that organic matters absorbs during its growth is released

⁵ For a fuller explanation of renewable sources see G. Boyle, B. Everett and G. Alexander, 'Introducing Renewable Energy' in G. Boyle (ed.) *Renewable Energy: Power for a Sustainable Future* (Oxford: Oxford University Press, 2012, 3rd ed.), pp.14-17.

to the atmosphere when it is burnt. In practice, some carbon emissions will be associated with all renewable energy production when this is calculated on a life cycle basis. For example, emissions will be produced through the consumption of electricity during the manufacture of wind turbines or by the production of fertilisers to cultivate biomass. Even so, it is possible to say that carbon emissions associated with renewable energy production tend to be much lower than those produced by fossil fuel combustion.

6.2.2 Why do we need renewable energy?

The growth of renewable energy production has been actively supported by the EU and by many of its Member States since the 1990s. The principal reason for this support is the need to mitigate climate change by securing rapid reductions of greenhouse gas emissions in general, and particularly those associated with energy consumption. The energy production industry, because of its current dependence on fossil fuels, is the largest sectoral contributor to the EU's greenhouse gas emissions (26 per cent in 2018).⁶ Energy consumption as a whole, including for terrestrial transportation and industrial, commercial and domestic consumption, was responsible for a staggering 74.68 per cent of the EU's emissions in 2018.⁷ Promoting renewable energy therefore forms a key part, alongside increasing energy efficiency, of the EU's strategy for meeting its political commitments to cut greenhouse gas emissions by at least 40 per cent of 1990 levels by 2030.

The mitigation of climate change provides reason enough for a switch from fossil fuels to lower carbon renewable energies, but there are also other factors that make the growth of renewable energy consumption a desirable policy objective for the EU. The first is to improve energy security by reducing the EU's dependence on imported fossil fuel energy. The EU imported 58.2 per cent of its energy consumption in 2018, but with reliance on imported petroleum and products and on natural gas at 94.6 per cent and 83.2 per cent respectively.⁸ In contrast, renewable energy sources (save for imported feedstocks for some biomass-based energies) are largely indigenous. Their exploitation may also provide a more stable economic base over the long term than relying on fuel sources whose prices are prone to volatility.

Second, the development of specialisations in renewable energy technologies can contribute to job and wealth creation in the EU and enable it to become a world leader in the export of technologies and expertise that are required worldwide in connection with global efforts to mitigate and adapt to climate

⁶ Commission, *EU Energy in Figures: Statistical Pocketbook 2020* (Publications Office of the European Union, 2020), pp.164-167.

⁷ Ibid.

⁸ Ibid., p. 24.

change. The Commission advised in 2012 that strong renewables growth to 2030 could generate over three million jobs and emphasised the value for the EU's global competitiveness of maintaining its leadership in renewable technologies as 'clean tech' industries become increasingly important around the world.⁹ Investment in renewable energy during the 2020s is also seen as a key aspect of the EU's COVID-19 crisis recovery plan.¹⁰

6.3 Background to the 2018 RES Directive

6.3.1 The Electricity and Biofuels Directives

The Commission made its first formal statement on renewable energy in a green paper of 1996,¹¹ and followed this in 1997 with a white paper setting out a Community Strategy and Action Plan for renewables.¹² The white paper and following policy documents of the Commission on renewable energy use the three reasons that are given in Section 6.2.2 above to justify intervention in this area at the European level.¹³

The process initiated by the white paper bore fruit in the adoption in 2001 of the Renewable Electricity Directive.¹⁴ The Directive's goal was to increase the share of electricity from renewable sources to 22.1 per cent of total EU electricity consumption by 2010. Article 3(1) placed an obligation on Member States to 'take appropriate steps to encourage greater consumption of electricity produced from renewable energy sources'. It advised them that this should be done in conformity with national indicative targets which they were required to set by Article 3(2). Member States had to take account of reference values stated in the Annex to the Directive for renewable electricity consumption when setting national indicative targets, but were not legally obliged under European law to achieve either their reference values or the indicative targets set by them. The 2003 Directive on promoting the consumption of biofuels in transportation took a similar approach with States being expected to ensure that a minimum proportion of biofuels and other renewable fuels would be placed on the market.¹⁵ Article 3(1)(b)(ii) requires Member States to set national targets for this minimum proportion using a reference value of 5.75 per cent of all petrol and diesel for transport purposes placed on their markets by 31 December 2010, but the Directive

⁹ Commission, 'Renewable Energy: A Major Player in the European Energy Market' COM (2012) 271 final, 2.

¹⁰ Commission, '2020 Report on the State of the Energy Union pursuant to Regulation (EU) 2018/1999 on Governance of the Energy Union and Climate Action' COM (2020) 950 final, 17-22.

¹¹ Commission, 'Energy for the future: renewable sources of energy – Green Paper for a Community Strategy and Action Plan' COM (96) 576 final.

¹² Commission, 'Energy for the future: renewable sources of energy – White Paper for a Community Strategy and Action Plan' COM (97) 599 final.

¹³ Ibid., 4-6. For example, the justifications are repeated in Commission, COM (2012) 271 final (n 9).

¹⁴ The 2001 Directive (n 2).

¹⁵ The Biofuels Directive (n 2).

does not place an obligation on them under European law to achieve that level of renewable fuels availability.

Member State performance in relation to their non-binding targets was somewhat patchy. The Commission's 2009 progress report (capturing the position in 2007) records that two Member States had already reached their targets for electricity, but that several States had either made no progress towards them or had seen declines in renewable energy shares due to increasing energy consumption.¹⁶ The 2013 report advises that 15 Member States failed to reach their indicative 2010 target for the share of renewables in the electricity mix, and that 22 Member States had not achieved the 5.75 per cent target under the Biofuels Directive.¹⁷ This situation of some States free-riding on others that were exceeding their targets led to the view that more intrusive legal measures would be required to ensure that all Member States should contribute in a spirit of solidarity to increasing energy consumption in the EU.¹⁸

6.3.2 Renewable Energy Directive 2009

In March 2007, the European Council agreed to increase renewable energy consumption to 20 per cent of overall energy consumption in the EU by 2020.¹⁹ This agreement formed part of the 20/20/20 strategy that sought to reduce the EU's greenhouse gas emissions to 80 per cent of 1990 levels by 2020. The other key plank of this strategy was to increase the efficiency of energy consumption by 20 per cent by 2020. Improving energy efficiency is valuable in itself for reducing emissions from energy production and use. It will also make it easier to achieve the commitment on renewables as growth in this sector will take place against a backdrop of shrinking demand for energy.

The Commission was invited by the European Council to prepare legal instrument to implement its political commitments. A new Directive for renewable energy was proposed in January 2008,²⁰ and was adopted after passing through the European legislative process in April 2009. It entered into force in June 2009 and Article 27(1) required Member States to transpose it in their national legislations by 5 December 2010. The 2009 RES Directive repealed certain provisions of the 2001 Directive on 1 April 2010 with the Directive and the Biofuels Directive being repealed and replaced in entirety by the 2009

¹⁶ Commission, 'The Renewable Energy Progress Report: Commission Report in accordance with Article 3 of Directive 2001/77/EC, Article 4(2) of Directive 2003/30/EC and on the implementation of the EU Biomass Action Plan, COM (2005) 628', COM (2009) 192 final, 3.

¹⁷ Commission, 'Renewable Energy Progress Report' COM (2013) 175 final, 4.

¹⁸ Commission, 'Renewable Energy: Progressing towards the 2020 target', COM (2011) 31 final, 3-4.

¹⁹ Council of the European Union, 'Presidency Conclusions: 8/9 March 2007' Ref.7224/1/07/Rev.1.

²⁰ Commission, 'Proposal for a Directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources' COM (2008) 19 final.

RES Directive with effect from 1 January 2012. Those parts of the 2009 RES Directive concerned with the promotion of biofuels and bioliquids in energy consumption were amended in 2015, with transposition required by September 2017, in view of difficulties with controlling indirect land use as a consequence of biomass-based energy production (see Section 6.4.5 below).²¹

There were two key differences between the 2009 RES Directive and its predecessors. The first was that it imposed national targets on Member States to achieve increases in renewable energy consumption that were legally binding at the EU level. This was felt to be necessary because of the poor performance by a majority of Member States under the 2001 Directive and the Biofuels Directive.²² Instead, all Member States were obliged to contribute to realising the EU's 2020 renewable energy objective by achieving national targets set out in Annex I to the Directive. Second, the targets under the 2009 RES Directive were for increasing the contribution of renewable sources to energy sources for heating and cooling and transportation in addition to electricity. As noted above the 2001 Directive was concerned with electricity only. It was for Member States to decide on how to reach their targets. Greater weight could be placed on decarbonising electricity than on heating and cooling and transportation or vice versa. However, all Member States also had a separate legally binding target of achieving 10 per cent of energy from renewable sources in energy consumption for transportation.²³ The Commission's view in proposing a common target was that a concerted effort would be required from Member States to reduce emissions from a sector that is largely dependent on fossil fuel energy.²⁴ It also felt that the need to reflect national differences in possession of renewable resources for electricity, heating, and cooling was not present for transport as biofuels are more easily traded than electricity.²⁵

Growth of the EU renewables sector under the 2009 RES Directive improved significantly on progress under the 2001 Directive and the Biofuels Directive. In contrast to the failure to meet EU targets under these Directive, the Commission's modelling predicted a renewable energy share in 2020 of 22.8 per cent to 23.1 per cent in total energy consumption for the European Union and of 12 per cent in energy for transport.²⁶ 5 Member States were assessed in 2018 to be in moderate (Luxembourg and the Netherlands) or severe (Belgium, France and Poland) risk of failing to meet national renewable energy

²¹ Directive (EU) 2015/1513 of the European Parliament and of the Council of 9 September 2015 amending Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources [2015] OJ L 239/1.

²² Commission, COM (2011) 31 final (n 18), 3-4.

²³ 2009 RES Directive (n 3), Article 3(4).

²⁴ Commission, '2020 by 2020: The Community's Climate Change Opportunity' COM (2008) 30 final, 7-8; Commission, COM (2008) 19 final (n 20), 8.

²⁵ Ibid.

²⁶ Commission, 'Renewable Energy Progress Report' COM (2020) 952 final, 9-12.

targets.²⁷ 11 Member States were expected to fall short of the 10% transport target, but with 3 of them missing it by a very small margin.²⁸ The figures compare favourably with the 15 and 22 Member States who fell short of indicative national targets under the 2009 RES Directive's predecessors.²⁹ Member States that fail to meet binding targets under Articles 3(1) and 3(4) of the 2009 RES Directive will be in breach of EU law and infraction proceedings against them can be initiated by the European Commission, potentially leading to the imposition of fines by the European Court of Justice.³⁰ The Directive gives Member States the opportunity of making up for shortfalls in their national efforts by arranging a statistical transfer (see Section 6.4.6) with a State whose proportion of renewable energy in total energy consumption is on track to exceed its national target. Statistical transfers can also be arranged under the 2009 RES Directive of renewable energy consumed in energy for transportation alone in connection with the 10% goal.³¹ The Commission recorded in its 2020 renewable energy progress report that four such agreements had been made, but that more may be concluded to enable Member States that had fallen behind required rates to make up for their shortfall.³²

6.3.3 Replacing the 2009 RES Directive

The Commission initiated discussion of the policy and legal framework for climate and energy in the period from 2021 to 2030 in January 2014.³³ This led to agreement by the European Council in October 2014 on an EU-wide target of at least 27 per cent energy from renewable sources in overall energy consumption by 2030.³⁴ The Commission's proposal, endorsed by the Council, called for a different approach from the previous regime. It records the Commission's views that European and national targets may have driven 'strong action by the Member States and growth in emerging industries', but that they did not always fit well with EU policy goals for undistorted competitive energy markets.³⁵ In addition, the proposal expresses concerns over the affordability of energy for consumers and businesses, over the effect of energy costs on the competitiveness of the EU's economy, and that binding targets may have been responsible for impairing the cost effectiveness of national efforts to implement Union climate and energy policy including by requiring states to

²⁷ Ibid., 9.

²⁸ Ibid., 12.

²⁹ Commission, COM (2013) 175 final (n 17), 4.

³⁰ D. Benink, H. Croezen and M. van Valkengoed, *The Accountability of European Renewable Energy and Climate Policy* (CE Delft, April 2011), available at <https://www.cedelft.eu/en/publications/1143/the-accountability-of-european-renewable-energy-and-climate-policy>.

³¹ Directive (EU) 2015/1513 (n 21), Article 2(4).

³² Commission, COM (2020) 952 final (n 26), 6-8.

³³ Commission, 'A policy framework for climate and energy in the period from 2020 to 2030' COM (2014) 15 final.

³⁴ European Council, 'Conclusion on 2030 Climate and Energy Policy', SN 79/14, 23 and 24 October 2014, available at https://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/145356.pdf.

³⁵ COM (2014) 15 final (n 33), 1-7.

develop renewable energy to a specified level even when this was not the most cost effective means open to them for reducing greenhouse gas emissions.³⁶

The Commission's proposal for reconciling these concerns with ensuring the further growth of renewable energy was to replace legally binding national targets for Member States with an overall Union target for renewable energy, thereby allowing Member States more flexibility in deciding on how to meet greenhouse gas reduction targets most cost effectively whilst imposing a collective responsibility for ensuring growth of renewables consumption. The overall Union target would be backed up by rigorous European-level governance arrangements to keep individual and collective progress by Member States towards its achievement under review.

The 27 per cent target was widely criticised as lacking in ambition. The Commission, the Parliament and the Council reached political agreement in June 2018 on a higher target of at least 32 per cent energy from renewable sources in overall energy consumption by 2030.³⁷ A proposal for a new renewable energy directive was published by the Commission in November 2016 as part of a wider package of laws to implement climate and energy policy for 2021-2030 and beyond under the Clean Energy for All Europeans programme.³⁸

6.4. The 2018 RES Directive

The 2018 RES Directive received legislative approval in December 2018.³⁹ Member States are required to have transposed it into national laws by 30 June 2021 (Art.36). The Directive enshrines the 32 per cent target, but takes note of views that changing circumstances could render it inadequate. It provides that the Commission will review the target (and others set under it) 'with a view to submitting a legislative proposal by 2023 to increase it' where change in the cost of renewable energy production, change in the Union's commitments for decarbonization under international law, or decline in the Union's energy consumption would justify an increase.⁴⁰

6.4.1 Core obligations

The most notable difference between the 2018 RES Directive and its predecessor is that it does not place legally binding national targets on Member States at the European level. Instead, they each

³⁶ Ibid.

³⁷ Commission, 'Europe leads the global clean energy transition: Commission welcomes ambitious agreement on further renewable energy deployment in the EU' (14 June 2018, Press Release), available at https://ec.europa.eu/commission/presscorner/detail/de/STATEMENT_18_4155.

³⁸ Commission, 'Proposal for a Directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources', COM (2016) 767 final.

³⁹ 2018 RES Directive (n 1).

⁴⁰ Ibid., Articles 3(1) and 25.

have obligations to ‘set national contributions to meet collectively’ the Union target for 2030 and to ‘collectively ensure’ its achievement (Arts.3(1) and 3(2)). The expectation that Member States will achieve a Union target without setting their responsibilities for ensuring that it is met in European law raises questions about how they can be held to account for perceived inadequacy of their contributions to its realization. What is there to prevent failure to achieve the overall EU target or the poor performance of individual states without having national legally binding targets at the European level?

The Commission proposed in its policy statement of 2014 to plug the gap left by the absence of national targets by establishing overarching Union governance for all policy areas contributing to its goal of a 40 per cent reduction of greenhouse gas emissions compared to 1990 levels by 2030.⁴¹ A governance regulation was proposed as part of the Clean Energy for all Europeans legislative programme,⁴² and was adopted in December 2018.⁴³

As a regulation, it has almost immediate direct legal effect. It requires each Member State to prepare and submit a draft integrated national energy and climate plan for 2021 to 2030 to the Commission by the end of 2018 with the final plan to be notified to the Commission and published by the end of 2019 (Arts.3 and 9). The plan should state the contribution that the Member State will make to achieving the Union target on renewable energy together with the interim trajectory that will be followed to reach it in line with milestones specified in the Regulation (Arts.4(a)(2) and 5). Detailed prescribed information on national policies and measures that will be pursued and taken to effect the contribution should also be provided (Art.3 and Annex I). Member States have extensive biennial reporting obligations during the period covered by the plan including on progress made on increasing renewable energy consumption (Arts.17-28).

The Commission may issue country specific recommendations for revising the draft plans to be submitted by the end of 2018 (Arts.9 and 31). If collective ambition is assessed to be inadequate for achievement of the 2030 target, recommendations may call on states whose contributions are deemed to be insufficient to increase their ambition (Art.31). States falling below their expected contribution will be identified by application of a formula set out in Annex II to the Regulation. Member States must take due account of recommendations when finalizing the plan, but are not

⁴¹ COM (2014) 15 final (n 33).

⁴² Commission, ‘Proposal for a Regulation on the Governance of the Energy Union’, COM (2016) 759 final.

⁴³ Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council [2018] OJ L 328/1.

obliged to follow them (Art.9(3)). Recommendations may also be made to a Member State if the Commission concludes through interim review that it is making insufficient progress towards implementing its climate plan, and to all states if it concludes that the Union is at risk of not meeting its target based on an aggregate interim assessment of performance (art.32). In addition, the Commission has an obligation if collective national measures on renewable energy are assessed to be insufficient to achieve the 2030 target to 'propose measures and exercise its power at the Union level' to ensure its achievement (Art.32(2)).

These extensive requirements for explanation by Member States of their climate and energy goals and policies will enable close scrutiny of their performance on renewable energy development. The resulting transparency may, if coupled with pressure from the Commission, from other Member States and from civil society, force Member States to improve their performance when it is found to be wanting despite not having legal obligation to do so. Even so, there is no clear legal basis under the Directive and the Governance Regulation for compelling improved performance on renewable energy development by Member States or for initiating infraction proceedings against them in the event that the 2030 Union target or a staging post towards this are not met. It remains to be seen whether thorough policing of Member State actions and enhanced scope for scrutiny from peers and civil society will be sufficient to avoid the poor performance experienced with the pre-2009 Directives.

Two features of the 2018 RES Directive seek to ensure that some progress is made by Member States beyond levels of renewable energy development reached by the end of 2020 notwithstanding the lack of national targets. First, Member States commit not to let the percentage of renewable energy in energy consumption fall below their target under the 2009 RES Directive and to take remedial steps if such a decline occurs (Art.3(4)). Second, the Commission takes on an obligation to 'support the high ambition of Member States through an enabling framework comprising the enhanced use of Union funds' (art.3(5)).

The Union target and Member States contributions to this focus on the overall level of renewable energy in national consumption. Accordingly, there is no repeat of the separate legally binding target for renewable energy in transport under the 2009 RES Directive, perhaps in view of the many difficulties the Union has encountered with meeting this (see 6.3.8 below). Member States are required however to provide separate details of estimated sectoral trajectories in their plans. With regard to transport, they must also set an obligation on fuel suppliers to ensure a minimum level of 14 per cent renewable energy in fuel supplies by 2030 (Art.25(1)). In addition, the 2018 RES Directive makes specific provision, albeit through an obligation of conduct rather than result, for mainstreaming renewable energy in heating and cooling (Art.23(1)). Member States must endeavor to increase the

share of renewable energy in that sector by an indicative 1.3 per cent as an annual average for the periods 2021 to 2025 and 2026 to 2030. They must also lay down the necessary measures to ensure that district heating and cooling systems contribute to this increase (Art.24).

6.4.2 Guarantees of Origin

Guarantees of Origin (GOs) are used to confirm that energy was produced from renewable sources. Their main role under the 2018 RES Directive (as it was under the 2001 Directive and the 2009 RES Directive) is to support the establishment of a 'green' energy market among environmentally conscious consumers by providing officially recognized backing for information given to them about the sources of their energy supplies. Electricity suppliers must provide information in bills and other documents on the contribution of each energy source to the fuel mix supplied over the preceding year.⁴⁴

Article 19 of the 2018 RES Directive requires Member States to establish a formal procedure for generating documentary proof to back up the claims made by electricity suppliers about the sources from which their supplies are derived. Its sub-clauses give direction on the administrative arrangements that they should put in place to enable the issue and cancellation of GOs, and on the information that they should contain. Time limits and other criteria for the validity of GOs are also specified to prevent their misuse.

The Commission's first draft of the 2009 RES Directive proposed that GOs should also be used to demonstrate Member State compliance with targets for increasing renewable energy consumption and in connection with an EU-wide GO trading scheme. This suggestion was rejected and replaced following Member State opposition by mechanisms for interstate cooperation in which GOs serve no purpose. This remains the position under the 2018 RES Directive. Article 18(2) of the 2018 RES Directive, repeating the wording of Article 15(2) of the 2009 RES Directive, advises that 'the guarantee of Origin shall have no function in term of a Member State's compliance with Article 3'.

It remains possible to trade GOs, but for the limited purpose of proving the inclusion of renewable energy within energy supplies to consumers.⁴⁵ In this regard, Member States must recognize GOs issued by each other except in the circumstances stated in Article 18(9). However, national laws that require actors to include a certain amount of renewable energy in energy produced, supplied or consumed by them tend to be associated with national schemes for the issue and trade of certificates

⁴⁴ Directive (EU) 2019/944 of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU [2019] OJ L158/125, Article 18(6) and Annex I, paragraph 5.

⁴⁵ H. L. Raadal, E. Dotzauer, O. J. Hanssen and H. P. Kildal, 'The Interaction between Electricity Disclosure and Tradable Green Certificates' (2012) 42 Energy Policy 419.

that are distinct from GOs. In this regard, Recital 55 advises that it is important to distinguish between green certificates used for support schemes and GOs.

6.4.3 Reforming administrative procedures

Complexity and duplication in the administrative and regulatory regimes of the Member States have long been seen by the Commission as a constraining factor on the growth of renewable energy production.⁴⁶ Article 6 of the 2001 Directive sought to initiate a process that would lead to the eradication of administrative barriers by requiring Member States both to evaluate their existing legislative and regulatory frameworks for authorizing renewable energy, and to publish reports by October 2003 stating actions that would be taken in light of the evaluation. It was clear however by the time of the Commission's review of progress on renewable energy of 2006 that inappropriate or unnecessarily complicated administrative barriers were continuing to limit its expansion.⁴⁷ Article 13(1) of the 2009 RES Directive took a stronger line than its predecessor by placing detailed requirements on Member States to improve regulations governing renewable energy development. Its sub-clauses instruct Member States to modify rules for authorizing renewable energy developments and related infrastructure with a view to making authorization processes quicker, less complex and more transparent.

Article 15(1) of the 2018 RES Directive maintains Article 13(1)'s strong line on removing administrative barriers by requiring Member States to ensure that 'any national rules concerning the authorization, certification and licensing procedures' that are applied to plant for renewable energy production, to transforming biomass into energy products and to producing non-organic transport fuels are 'proportionate and necessary and contribute to the implementation of the energy efficiency first principle'. The remainder of Article 15 directs Member States to use regulations in ways that promote renewable energy consumption, and particularly in the design and construction of new and refurbishment of existing building stock. For example, national buildings and codes should include measures that increase consumption of energy from renewable sources including by requiring the use of minimum levels of renewable energy in new buildings and those subject to major renovation (Article 15(4)). In particular, they should promote renewable energy heating and cooling systems that achieve significant reductions in energy consumption (Article 15(6)). Article 18 also seeks to promote the diffusion of renewable energy technologies through its various requirements for Member States

⁴⁶ Commission, COM (2000) 279 final, 'Proposal for a Directive of the European Parliament and of the Council on the promotion of electricity from renewable energy sources in the internal electricity market', Explanatory Memorandum, Section 2.3, describes 'administrative and planning procedures' as a 'major barrier to the further development of RES electricity in the EU'.

⁴⁷ Commission, 'Green Paper follow-up action: Report on progress in renewable electricity', COM (2006) 849 final, 17-19.

to ensure that information about renewable energy technologies and public support for their installation is widely available, and to establish arrangements that increase public confidence with their use including certification schemes for installers.

The 2009 Directive encouraged Member States to streamline permitting regimes by establishing ‘one-stop-shop’ regimes with one authority being responsible for awarding the permit.⁴⁸ The Commission complained in following progress reports that Member States were being slow in introducing this approach.⁴⁹ In view of this and other perceived inadequacies with Member State actions to streamline administrative processes, the 2018 RES Directive places additional obligations on Member States for reforming administrative processes. These are: a requirement to establish designated contact points that will, on an applicant’s request, guide through and facilitate the entire permit application (Art.16); the time limitation of permit granting processes to a maximum of two years for power plants and one year for small-scale electricity generation installations (capacities of less than 150kW) and repowering existing renewable energy plants, all unless ‘extraordinary circumstances’ justify a longer time-scale (Art.16(4)-(6)); and simpler grid connection notification processes for low capacity generating facilities (e.g. rooftop solar PV panels) (Art.17).

6.4.4 Grid access⁵⁰

The 2001 Directive and the 2009 RES Directive placed obligations on Member States to address barriers to the expansion of renewable energy related to the operation and development of transmission and distribution systems for electricity in their territories.⁵¹ The 2009 RES Directive also requires them to take steps supporting the integration of renewable gases into pipeline networks and district heating and cooling using renewable sources.⁵²

Provisions on grid access in the 2018 RES Directive address the integration of renewable gases to existing infrastructure alone (Art.20). There are four main reasons for its lack of provision on integrating renewable electricity in networks. First, the Electricity Regulation component of the Clean Energy for all Europeans legislative programme requires Member States to reform existing market structures which make it difficult for electricity systems to accommodate renewable electricity and for renewable generators to participate in system balancing.⁵³ For example, it mandates the introduction of markets operating as close to real time as possible across the European Union (Article 7(2)(c)).

⁴⁸ RES Directive 2009 (n 3), Article 22(3)(a).

⁴⁹ Commission, ‘Renewable Energy Progress Report’, COM (2017) 57 final, 10.

⁵⁰ Subject matter covered in this section is also examined in Chapter 10 of this book, ‘EU Climate Regulation and Energy Network Management’.

⁵¹ The 2001 Directive (n 2), Article 7; 2009 RES Directive (n 3), Article 16.

⁵² 2009 RES Directive (n 3), Articles 16(9) to (11).

⁵³ Regulation 2019/943 of 5 June 2019 on the internal market for electricity [2019] L158/54

Second, the obligation under the 2009 RES Directive for Member States to afford priority or guaranteed access for renewable electricity to networks is, with regard to the former, incompatible with the move away from subsidies which guarantee legally that electricity produced by supported generating plant will be purchased at a set price (see. 6.4,2 above) and, with regard to the latter, made unnecessary by duties for transmission and distribution system operators and market operators under the 2019 Electricity Regulation to enable the integration of renewables into electricity networks and trading platforms.⁵⁴ Third, provisions under the Electricity Regulation maintain obligations for Member States to prevent dispatch and curtailment by system operators in ways that disadvantage renewable generators unnecessarily (Articles 12 and 16). Fourth, the 2018 RES Directive obliges Member States to ensure that persons who produce and consume their own electricity and communities of them are able to do so and to sell their excess production by feeding it into the grid (Arts.21 and 22). These provisions form part of a wider package of measures under the legislative programme with provisions under the Electricity Regulation and Directive also requiring adaptation of national laws to enable self-consumers and renewable energy communities to take part in energy systems including by selling excess electricity in markets directly or through aggregators.⁵⁵ Endorsement of possibilities for the democratisation of energy supplies afforded by renewable energy technologies responds to problems that this presents for energy systems and related legal frameworks designed around centralized production facilities. It does this by recognising the potential for participation in energy production and system management to increase public acceptance of the shift away from high carbon energy supplies in general and of renewable energy developments such as onshore wind farms, so often a source of public opposition, in particular.

6.4.5 Sustainability criteria

The European Commission sees biofuels as the main contributor to the decarbonisation of energy consumed for transportation until other alternatives to petrol such as gas, electricity and hydrogen become more widely available.⁵⁶ However, it also recognises that a major increase in the consumption of biofuels, particularly where these are sourced from feedstocks that can also be used as food crops, could have unsustainable outcomes.⁵⁷ Particular fears are that this could lead to the degradation of environmentally valuable lands, increases in food prices as land used previously to grow food crops is turned over to the production of transportation crops, and the growth of land in cultivation to enable biomass for transport fuels to be produced alongside food. Some biofuels could even be responsible for higher carbon emissions

⁵⁴ Ibid.

⁵⁵ Directive (EU) 2019/944 (n 65).

⁵⁶ Commission, 'An EU Strategy for Biofuels' COM (2006) 34 final.

⁵⁷ Ibid., 10.

than fossil fuels when the full effects of their production, including direct and indirect changes in land use, are taken into account.

In view of these concerns, the 2009 RES Directive laid down certain 'sustainability' criteria that apply both to EU-produced and imported biofuels.⁵⁸ The Directive defines biofuels as 'liquid or gaseous fuel for transport produced from biomass'⁵⁹ Biofuels that failed to meet the criteria could still be imported into and sold in the EU, but Article 17(1) advised that only those which satisfied them would be counted toward the 10 per cent target for renewables in energy consumed for transportation and be eligible for financial support. The criteria also applied to bioliquids, defined in Article 2(h) of the Directive as liquid fuels produced from biomass but used for other purposes than to provide energy for transportation (in other words, electricity, heating and cooling). The Commission felt that this was necessary to prevent biofuels that did not meet the sustainability criteria from receiving subsidies and contributing to Member State targets through the backdoor by being used as bioliquids instead.⁶⁰

The 2018 RES Directive adopts the regime created by the 2009 RES Directive which seeks to discourage the production of 'unsustainable' biofuels and bioliquids and expands it to include 'biomass fuels', a defined-term meaning 'solid and gaseous fuels produced from biomass' (Arts. 2(27) and 29)). As a result, the sustainability of all biomass-based energy will be considered when assessing whether renewable energy consumption should count towards targets and be eligible to receive subsidies.

Article 29 of the 2018 RES Directive specifies standards that biofuels should achieve to be able to count towards targets and be eligible for national financial support. First, their consumption should achieve or exceed minimum levels of greenhouse gas emissions savings over fossil fuels. The minimum saving for biofuels, bioliquids and biomass starts at 50% where they are produced in installations starting operation on or before 5 October 2015, rising to 60% where they are produced in installations starting operation between 6 October 2015 and 31 December 2020 and then to 65% for installations starting operation on or after 1 January 2021.⁶¹ The Directive also adds to restrictions under its predecessor by laying down minimum savings for electricity, heating and cooling produced from biomass fuels starting operation from 1 January 2021.⁶² The electricity savings requirement applies only to installations meeting criteria set out at Article 29(11).

⁵⁸ L. Eremeichvili, 'Greening the Electricity Sector – Developing Markets for Trading Biomass' in M. Roggenkamp and H. Bjørnebye, *European Energy Law Report X* (Cambridge: Intersentia, 2014), pp. 211–57 offers a full account of EU law and policy on sustainability concerns over biomass-based energy.

⁵⁹ 2009 RES Directive (n 3), Article 2(i).

⁶⁰ 2009 RES Directive (n 3), Recital 67.

⁶¹ 2018 RES Directive (n 1), Article 29(10).

⁶² *Ibid.*, Article 29(10)(d).

A mechanism for calculating emissions from biofuels is set out in Article 30. A life cycle approach is taken in which emissions from cultivation (including from direct land conversion and fertilizer use), transportation of biomass, and from the production, transportation, and distribution of biomass, bioliquids and biomass fuels are taken into account.

Secondly, raw materials for biofuels, bioliquids and biomass fuels made from agricultural biomass must not be obtained from land possessing one or more of the statuses listed in Article 29(3)–(5) as at 1 January 2008 if they are to count towards the Directive's targets or be entitled to support. The listed statuses are collectively described as belonging to: land with high biodiversity value including primary forests, legally designated areas for nature protection and highly biodiverse grassland (Art. 29(3)); land with high carbon stock including wetlands, continuously forested areas, and other forested areas meeting certain criteria (Art. 29(4)); and peat land (Art. 29(5)). Separate criteria apply for biofuels, bioliquids and biomass fuels produced from forest biomass (Arts. 29(6) and 29(7)). Separate criteria and also relaxations of criteria apply for biofuels, bioliquids and biomass fuels and electricity, heating and cooling produced from waste and residues (Arts. 29(1) and (2)).

Member States must require that 'economic operators ... show that the sustainability criteria ... have been fulfilled' using a methodology set out in Article 30(1). Article 30(4) allows them to prove compliance by participating in voluntary national and international schemes whose validity has been recognized by the EU. The Commission has recognised a number of voluntary schemes for biofuels compliance to date.⁶³

Challenges with identifying emissions and environmental harm caused by indirect land use change due to already cultivated land being used for biomass energy crops bedevilled the European Union's attempts to dissuade the production of unsustainable biofuels and bioliquids by applying sustainability criteria under the 2009 RES Directive.⁶⁴ Amendments to the 2009 RES Directive adopted in October 2015 responded to these challenges by restricting the use of biofuels derived from sources with high risks attached to them of unsustainable cultivation and low levels of emission reduction.⁶⁵ An amendment to Article 3(4) limited the contribution that biofuels from 'cereal and other starch-rich crops, sugars and oil

⁶³ Commission, 'Voluntary Schemes', available at https://ec.europa.eu/energy/topics/renewable-energy/biofuels/voluntary-schemes_en?redir=1

⁶⁴ Commission, 'Report on indirect land-use change related to biofuels and bioliquids, COM (2010) 811 final, 14.

⁶⁵ Directive (EU) 2015/1513 (n 21).

crops' could make to meeting the 10 per cent target to 7 per cent of overall energy consumption for transportation in 2020.

The 2018 RES Directive goes further in discouraging unsustainable biomass energy production due to indirect land use change. The cap on the extent to which biofuels, bioliquids and biomass fuels produced from food and feed crops can count towards targets is set at 1% higher than the share of such fuels in energy consumption for road and rail transport in 2020 in the Member State concerned with a maximum of 7% (Art.26(1)). The contribution of biofuels, bioliquids and biomass fuels posing a high risk of indirect land use change for which a significant expansion of the production area into land with high carbon stocks is observed is also limited to the level of their consumption in 2019, declining to 0% by 2030 (Art.26(2)).⁶⁶

The amendments to the 2009 RES Directive also placed further emphasis on promoting biofuels derived from waste that are viewed as more sustainable because they do not create an additional demand for land. This was done by doubling their energy content when calculating their contribution to the 2020 target for 10 per cent of energy for transport from renewable sources (but not the 20 per cent target for renewable energy as a whole).⁶⁷ Member States were also required to set and endeavor to achieve a national target with a reference value of 0.5 per cent of energy content of the share of renewable energy in all forms of transport in 2020 for biofuels from the non-food, waste and algae feedstocks listed in Annex IX of the 2009 RES Directive (as amended) (Art.3(4)(e)). The 2018 RES Directive maintains its predecessor's promotion of advanced biofuels by requiring that the share of final consumption of energy in the transportation sector from them should be at least 0.2% in 2021, 1% in 2025 and 3.5% in 2030 (Article 25(1)).

6.4.6 Cooperation mechanisms

One of the core objectives of the Commission in drafting what became the 2009 RES Directive was to promote cost-effectiveness in the growth of renewable energy production.⁶⁸ The Commission's view was that the overall cost of meeting the 2020 target for renewable energy could be reduced if Member States were to cease concentrating on national renewable energy resources and to look instead at possibilities for producing renewable energy in other Member States where this could be done at

⁶⁶ The high-risk feedstocks affected by this provision are defined by Commission Delegated Regulation (EU) 2019/807 of 13 March 2019 supplementing Directive (EU) 2018/2001 of the European Parliament and of the Council as regards the determination of high indirect land-use change-risk feedstock for which a significant expansion of the production area into land with high carbon stock is observed and the certification of low indirect land-use change-risk biofuels, bioliquids and biomass fuels [2019] OJ L 133/1.

⁶⁷ RES Directive 2009 (n 3), Annex IX.

⁶⁸ Commission, COM (2008) 30 final (n 24) 5.

lower cost.⁶⁹ Articles 6-11 of the 2009 RES Directive sought to engender a ‘European’ mindset to exploiting renewable energy resources by creating mechanisms that would enable Member State cooperation on meeting their national targets. The 2018 RES Directive also permits Member States to use the four mechanisms established by the 2009 RES Directive, but with some minor modifications to their design. The mechanisms are described briefly in the following sections.

Statistical Transfers

A Member State may agree to transfer a specified amount of the renewable energy that counts towards its target under the 2018 RES Directive to another Member State.⁷⁰ This is described as a ‘statistical’ rather than a physical transfer of energy produced in one State to another. Statistical transfers agreed independently by Member States become effective after all of the states involved have notified the transfer to the Commission.⁷¹ The Commission is also given a duty to ‘facilitate statistical transfers’ by establishing a ‘Union renewable development platform’.⁷² The platform’s purpose is to provide a marketplace for statistical transfers of national renewable energy consumption. Member States may submit on a voluntary basis annual data on their national contributions to the Union target or benchmarks set for monitoring progress together with statements on the amount by which they expect to exceed or fall short of contributions and the price at which they would accept a transfer of excess renewable energy production from or to another Member State together with other conditions for transfer. The platform will establish a mechanism for matching requests and offers for transfer. The Commission is empowered to establish the platform and to set conditions for finalizing transfers through it.⁷³ The platform had not been established by this chapter’s cut-off date.

Joint Projects

This mechanism, provision for which is made by Articles 9 and 10 of the 2018 RES Directive, involves a statistical transfer of energy produced by a joint project ‘relating to the production of electricity, heating or cooling from renewable energy sources’ from the compliance account of one Member State to that of another. The project must have become operational after 25 June 2009 or have increased the capacity of an already existing facility after that date through refurbishment. Article 9(1) advises that the cooperation under this mechanism ‘may involve private operators’. This means in practice that a private entity may seek support from a Member State for development in another State that is unable to provide sufficient backing for

⁶⁹ Commission, COM (2011) 31 final (n 22) 10-11.

⁷⁰ 2018 RES Directive (n 1), Article 8.

⁷¹ *Ibid.*, Article 8(5)).

⁷² *Ibid.*, Article 8(2))

⁷³ *Ibid.*, Article 8(3).

a proposed project to be pursued.⁷⁴ Control over the use of the mechanism in such circumstances remains exclusively with the States concerned who must agree on the terms of support and the basis on which the renewable energy is to be shared between them.

Joint Projects with Third Parties

The EU's strategy for decarbonising energy supplies looks not only to renewable energy production by Member States, but also to collaboration with third countries on generating electricity from their renewable sources. The Directive reflects this by including a mechanism under Articles 11 and 12 for cooperation between Member States and third countries. This allows electricity production in the latter to be counted towards Member States targets. It is more prescriptive than for other mechanism as to the circumstances in which it may be used. Electricity can only be counted from installations that entered into operation or whose capacity was upgraded after 25/06/2009 and that were developed or upgraded as joint projects between the Member States concerned and the third country.⁷⁵ This is necessary to prevent existing renewable energy capacity being diverted from host States who may then make up the deficit through fossil fuel consumption.⁷⁶ The Directive also suggests in places that the new development should produce electricity for consumption domestically as well as in the EU although this is not an express requirement for their output to count towards Member State targets.⁷⁷

Member States may apply for electricity produced in third countries but not consumed in the EU to be counted towards their targets in the limited circumstances set out in Article 11(3). These describe a scenario in which renewable energy production from a joint project has commenced, but cannot be transported to the EU because it is not possible for the interconnector that will be used to transport it to commence operation by the end of 2030. The exception is further limited by requirements that construction of the interconnector has begun by the end of 2026 and that it must be possible at least for it to become operational before the end of 2032.

Joint Support Schemes

The final mechanism, provision for which is made by Article 13 of the 2018 RES Directive, allows Member States that join or partly coordinate their national support schemes to determine how energy supported under the joint scheme is shared between them for the purposes of calculating their contributions to the European Union's 2030 goal. The States concerned may make statistical transfers or may set up a distributional rule for allocating supported energy to their compliance accounts. Distribution rules

⁷⁴ Commission, 'Review of European and national financing of renewable energy in accordance with Article 23(7) of Directive 2009/28/EC', SEC (2011) 131 final, 8.

⁷⁵ 2018 RES Directive (n 1), Article 11(2)(b).

⁷⁶ Ibid., Recital 41.

⁷⁷ Ibid., Article 11(5)(d) and Recital 42.

should be notified to the Commission within three months after the end of the month in which they take effect. Annual notifications of energy produced during the preceding year that is allocated to them under the rule should also be provided by each of the participating States.

This mechanism comes closest to the Commission's original vision of a European-wide trading scheme as it allows the States concerned to focus on improving the cost efficiency of renewable energy production within the extended territory that the joint scheme covers. It is also likely to be the most difficult mechanism to apply because of the many legal complexities associated with harmonizing national approaches sufficiently to provide a common support scheme.⁷⁸

The use and future of Cooperation Mechanisms

Limited use had been made of the mechanisms for achieving the target under the 2009 RES Directive by the chapter cut-off date. Statistical transfers of national renewable energy production from Lithuania and Estonia to Luxembourg were agreed in 2017.⁷⁹ Two additional statistical transfers had been agreed by October 2020 between the Netherlands and Denmark and Malta and Estonia.⁸⁰ The Commission expected further transfers to be agreed in view of likely failures by some States to achieve their 2020 targets for renewable energy and for renewables in energy for transportation.⁸¹ Sweden and Norway adopted a joint green certificate scheme for promoting renewable energy in their territories.⁸² Norway is not a Member State of the EU, but applies the 2009 RES Directive along with Iceland, due to its incorporation in December 2011 into the corpus of EU law that States party to the European Economic Area Agreement agree to apply in their own territories.⁸³ In addition, Germany and Denmark agreed to a partial opening of their national support schemes to solar PV projects constructed in each other's territories.⁸⁴

⁷⁸ C. Klessmann, P. Lamers, M. Ragwitz and G. Resch, 'Design options for cooperation mechanisms under the new European renewable energy directive' (2010) 38 *Energy Policy* 4687-4690.

⁷⁹ N. Caldes, P. del Rio, Y. Lechon and A. Gerbeti, 'Renewable Energy Cooperation in Europe: What next? Drivers and barriers to the use of cooperation mechanisms' [2019] 12 *Energies* 1-22.

⁸⁰ Commission, COM (2020) 952 final (n 26), 6-7.

⁸¹ *Ibid.*, 6-12.

⁸² Agreement on a Common Market for Electricity Certificates, Stockholm, 29 June 2011. An unofficial translation of the Agreement is available at https://www.regjeringen.no/globalassets/upload/oed/pdf/filer/2/elsertifikater/agreement_on_a_common_market_for_electricity_certificates.pdf. See O. Boge, 'The Norwegian-Swedish Electricity Certificates Market' in M. M. Roggenkamp and H. Bjørnebye (eds) *European Energy and Law Report X* (Cambridge: Intersentia, 2014), pp.199-210.

⁸³ European Free Trade Association, 'Directive on the promotion of renewable energy incorporated', 20 December 2011, <https://www.efta.int/EEA/news/Directive-promotion-renewable-energy-incorporated-1086>. Liechtenstein was exempt from applying the Directive.

⁸⁴ Governments of the Federal Republic of Germany and of the Kingdom of Denmark, Agreement on the Establishment of a Framework for the Partial Opening of National Support Schemes to support the generation of energy from solar photovoltaic projects and for the cross-border administration of such projects in the context of a single pilot run in 2016, 20 July 2016,

The Commission speculated after only one use had been made of the mechanisms by 2013 that Member State reluctance to enter into agreements was due to uncertainty over how to use them.⁸⁵ To address this, it produced guidelines for employing mechanisms in November 2013 including methodologies for price setting, legal and institutional framework conditions and model agreements.⁸⁶ However, it also recognized that Member States prefer to concentrate on exploiting resources nationally because of the associated benefits for national economies and employment.⁸⁷

It would appear from the continued low use of mechanisms since 2013 that such considerations have continued to dominate Member State thinking on how to go about meeting targets for renewable energy consumption. Despite this, the mechanisms have been given an on-going role in promoting interstate collaboration on renewable energy development under the 2018 RES Directive. The Commission sees particular scope for using them in connection with anticipated significant growth in the offshore wind energy capacity of Member States during the 2020s.⁸⁸

6.5 Financial support for renewable energy

6.5.1 Why are subsidies necessary?

The enormous investment required in technologies for producing and consuming renewable energy if EU targets are to be met is not likely to be stimulated by market prices alone. One reason for this is that prices in markets which remain dominated by long-established fossil fuel incumbents may not be high enough to create confidence that monies invested in facilities for producing electricity and fuels for heating and transport as well as technologies required for their consumption will be recovered together with an attractive profit margin through sales of these commodities and products.

Declining costs for electricity produced by better-established renewable technologies such as for onshore wind and solar PV often, although not always, enable projects using them to compete at

https://www.bmwi.de/Redaktion/EN/Downloads/agreement-between-germany-and-denmark.pdf?__blob=publicationFile&v=4. D. Dmitruk, 'Danish-German Cooperation on the first Cross-Border Tenders for Renewable Energy: A Blueprint for Future Cross-Border RES Projects?' in M. M. Roggenkamp and C. Banet (eds), *European Energy Law Report XII* (1st edn, Intersentia 2018) 113-132.

⁸⁵ Commission, 'Staff Working Document accompanying Renewable Energy: A major player in the European Energy Market', SWD (2012) 164 final, 16-17.

⁸⁶ Commission, Guidance on the use of renewable energy cooperation mechanisms accompanying the document Communication from the Commission: Delivering the internal energy market and making the most of public intervention', SWD (2013) 440 final.

⁸⁷ Commission, SWD (2012) 164 final (n 108), 16-17.

⁸⁸ Commission, 'An EU Strategy to harness the potential of offshore renewable energy for a climate neutral future', COM (2020) 741 final, 16.

market prices with fossil fuel generation.⁸⁹ However, newer forms of renewable electricity production may struggle to compete with prices attainable by established power generating companies employing technologies which have become highly efficient through long experience with their use and which benefit through centralization from economies of scale. Investor concern that energy sales may not be sufficient to enable cost and profit recovery may also be heightened for all renewable electricity projects, however established the technology may be, by factors such as: the significant proportion of overall project capital costs incurred at the development stage, meaning that substantial confidence in their recovery is needed before development proceeds; to the comparatively small scale of many renewable energy developments, again meaning that high confidence is needed in cost recovery up-front; and to the difficulties and costs associated with connecting to networks and integrating into energy systems that were designed to transmit and distribute energy from centralized fossil fuel production facilities.

Means of producing renewable energy other than electricity for use in industry, heating, cooling and transportation are also disadvantaged by higher production costs and lower availability compared to fossil fuels such as petroleum and natural gas that have benefitted from several decades of experience with technologies for their production and consumption.⁹⁰

6.5.2. Subsidies in EU Law

Member States of the EU have attempted to create investor confidence in renewable energy since they first began promoting its production in the 1980s either by providing monies themselves from public funds or by placing legal obligations on private actors to support the growth of a renewables sector. The 2009 and 2018 RES Directives recognise that the provision of financial backing for renewable energy by Member States is required if targets for growth in its consumption are to be met. Both of them advise that Member States may apply 'support schemes' in order to reach their targets, defining 'Support Scheme' in Articles 2(k) and 2(5) respectively as:

'any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewables sources by reducing the cost of that energy, increasing the

⁸⁹ International Renewable Energy Agency, 'Renewable Power Generation Costs in 2017' (January 2018, report) <<https://www.irena.org/publications/2018/Jan/Renewable-power-generation-costs-in-2017>>.

⁹⁰ International Renewable Energy Agency, 'Roadmap for a renewable future 2016 edition', pp.106-120 (March 2016, report) <www.irena.org/publications/2016/Mar/REmap-Roadmap-for-A-Renewable-Energy-Future-2016-Edition>.

price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased’.

The definitions then go on to provide non-exclusive lists of ways in which support for renewable energy can be provided.

The European Commission accepts that the provision of support is made necessary by the EU’s renewable energy policy goals, but regards national subsidies as an undesirable departure from a preferred status quo of European-wide internal energy markets free of measures that distort competition including by advancing national preferences.⁹¹

This section considers the main approaches that Member States have employed to support renewable energy development. These are grouped under measures used to enhance access to funding for development (‘investment support’) and to enable the recovery of development costs once the funded energy production plant is operational (‘operating support’). It examines how state aid guidelines and provision under the 2018 RES Directive have been used to promote the integration and of renewable energy into markets. It also considers legal questions that the use of support schemes by Member States has given rise to concerning their compatibility with provisions of the Treaty on the Functioning of the European Union (TFEU) on the free movement of goods and state aid.⁹² The section on operating support focuses on electricity as relevant schemes are used primarily to support the growth of renewable electricity production.

6.5.3 Investment support

Financial backing for research into and the development of early-stage renewable energy technologies and for the trialling of pre-commercial prototypes is often hard to obtain because of the high risk that monies invested will not be recovered. Alternatively, investors may only be prepared to provide investment at rates of return that would make it difficult to recover development costs through energy sales without substantial operating support (see section 6.5.4. below). Member States of the EU use measures, collectively referred to as ‘investment support’, to make it easier for innovators to develop new renewable energy technologies and to encourage consumers to use them through the provision of public financial support.⁹³

Grant schemes provide funding to developers for the development and testing of eligible renewable

⁹¹ Commission, European Commission guidance for the design of renewable support schemes – Accompanying the document Communication from the Commission: Delivering the internal market in electricity and making the most of public intervention’, SWD (2013) 439 final.

⁹² Treaty on the Functioning of the European Union [2008] OJ C115/47.

⁹³ Commission, SEC (2011) 131 final, (n 97), 4-6; Commission, SWD (2013) 439 final (n 114), 11-12

energy technologies. The provision of long-term public loans enables them to access investment at much lower rates of return than would be available to them through private finance. Alternatively, guarantees of repayment from public bodies in the event that a borrower defaults may enable developers to access private finance more cheaply. Long-term grants are also used to encourage the purchase of renewable technologies by domestic and business consumers. For example, most Member States offer investment grants to promote the take up of renewable energy heating systems such as biomass boilers.⁹⁴

In addition to making public funds available, governments also provide tax exemptions and reductions to support investment by reducing the financial burden on developers. More importantly, reduced tax rates can be used to encourage the consumption of renewable energy rather than fossil fuels. The use of biofuels is commonly promoted by applying lower rates of fuel tax to them compared to petrol or by allowing tax offsets for their consumption.⁹⁵

Investment support is generally viewed as playing a supporting role to operating support. Its most important function to date has been to enable technologies to reach the point where they are perceived as a lower risk by investors because they are capable of commercial-scale operation. However, the Commission, in its most recent guidance on financial support for renewable energy, encourages the wider use of investment support because it does not distort the operation of energy markets.⁹⁶

6.5.4 Operating support

Feed-in Tariffs

Feed-in-tariffs (FITs) provide renewable energy operators with a specified price for each unit of electricity fed in to the electricity grid to which they are attached over a specified duration (typically between 10 and 20 years). FIT schemes may be funded by the State concerned. Alternatively, some schemes oblige operators of electricity networks or suppliers to pay the tariff with the costs of this being recovered through electricity bills from consumers. Tariff rates may vary according to the level of financial support that a technology needs to become established or to policy goals.

FITs have proved to be a successful means of increasing renewable electricity consumption.⁹⁷ The stability that

⁹⁴ Commission, SEC (2011) 131 final, (n 97), 6, 9-10; current information on Member State support schemes can be found at <http://www.res-legal.eu/>.

⁹⁵ Commission, SEC (2011) 131 final, (n 97), 6.

⁹⁶ Commission, SWD (2013) 439 final (n 114), 11-12.

⁹⁷ Commission, SEC (2011) 131 final, (n 97), 6; V. Lauber, 'The European Experience with Renewable Energy Support Schemes and Their Adoption: Potential Lessons for Other Countries' [2011] 2 *Renewable Energy Law and Policy*, 120.

receipt of a guaranteed return for a guaranteed period provides attracts lower cost investment due to the lower level of market risk. However, the Commission does not favour their use because it considers that the provision of a definite sales price distorts markets for electricity in the EU. It is also concerned that a lack of market exposure could be to the detriment of the renewable electricity sector by removing an incentive for generators to improve the efficiency of energy production through technological and operational innovation.⁹⁸

The Commission's guidance document of November 2013 on the design of support schemes recommends that FITs should be used only to support small-scale renewable energy development, but that their use should otherwise be phased out. Its guidance on State aid in the field of energy and environment (see s. 6.4.3 below) entrenches this position by making it clear that new FIT schemes should only be introduced for developments of below 3MW or 3 units for wind energy or 500kW for other technologies (for example, domestic-/community-scale developments).⁹⁹ FIT schemes that were approved under preceding State aid regimes may continue to accept new entrants, and recipients of tariffs under them will not be affected. However, existing schemes should be 'brought into line' (for example, replaced with less market distorting alternatives) with the new State aid regime at points where their approval under the preceding regime expires or if they are adapted. The 2018 RES Directive confirms the guidance by only allowing Member States to use feed-in-tariffs for the small-scale installations identified in the State Aid guidelines (Art.4(3) and recital 17).

Obligation/Certificate schemes

Some Member States have enacted laws that oblige electricity sector actors (usually suppliers, but sometimes also producers and consumers) to include a specified proportion of renewable electricity in their overall production, supply or consumption of energy.¹⁰⁰ Compliance with the obligation is demonstrated by the provision of certificates. These are issued to renewable electricity producers who may sell them either together with or separately from the related electricity to obligated actors. The idea behind such schemes is that the receipt of two separate revenue streams should enable developers of renewable energy installations to recover monies invested in them. This type of scheme is also widely used in connection with energy for transportation with suppliers of fuel being obliged to include a proportion of energy from renewable sources in their supplies. Meeting these obligations is largely achieved by the blending of petrol

⁹⁸ Commission, SWD (2013) 439 final (n 114), 11-12.

⁹⁹ Commission, 'Guidelines on state aid for environmental protection and energy 2014-2020, 2014/C 200/01, 25 para. 125.

¹⁰⁰ Commission, SWD (2013) 439 final (n 114), 10-11, 25.

and diesel with biofuels as permitted under the Fuel Quality Directive.¹⁰¹ The 2019 RES Directive legally entrenches this approach at the European level by requiring Member States to set an obligation on fuel suppliers to ensure that the share of renewable energy within the final consumption of energy in the transport sector is at least 14 per cent by 2030 (minimum share) with the growth of the share following an indicative trajectory to be set by the Member State and to be calculated as provided for under the Directive (Art. 25(1)).

Obligation schemes can be technology neutral or can give differing levels of support for different technologies (a practice known as banding). This is generally done by providing that well-established technologies such as onshore wind will receive fewer certificates for each unit of electricity produced than newer technologies such as wave and tidal energy that require stronger initial support to become established.

The Commission has long preferred obligation schemes over FIT schemes because it believes that the market exposure under them will incentivise producers to reduce costs resulting in lower energy prices. However, it recognises in its guidance document on the design of support schemes of 2013 that the cost of capital tends to be higher for projects funded by obligation schemes because of the risk that uncertain revenue streams from electricity and certificate sales will not cover development costs.¹⁰² As a result, this may limit renewable energy development to large-scale incumbents that can afford to finance projects themselves or that are able to obtain investment on more favourable terms than new market entrants. Cheaper, well-established technologies are also preferred over newer technologies whose electricity is more costly under such schemes because of the greater chance of securing a profit through the combined revenue from electricity and certificate sales. In view of this, the Commission endorses the use of banding mentioned above and of measures such as a floor price for tradable certificates to enhance confidence that cost recovery will be possible for technologies at whatever stage of development they may have reached.

Premium schemes

Premium schemes are increasingly seen by Member States and the Commission as a potential alternative to FIT and obligation schemes for supporting renewable energy technologies that are able to be developed at commercial scales.¹⁰³ Electricity from generating plant supported under such schemes is sold into markets, but the risks associated with exposure to price volatility are tempered by the payment of a premium (typically by the operators of transmission systems or suppliers under a legal obligation) for each unit of sold electricity. The payment may be fixed at a specified level or may be a 'floating' amount

¹⁰¹ Directive 98/70/EC of 13 October 1998 relating to the quality of petrol and diesel fuels and amending Council Directive 93/12/EEC [1998] OJ L350/58

¹⁰² Ibid., 8-9.

¹⁰³ Ibid. 8-9.

that falls as electricity and carbon prices increase.

The Commission prefers the use of premium schemes to other options for renewable energy technologies that are capable of commercial deployment because it considers that they strike an appropriate balance between the market exposure that may drive renewable energy producers to improve efficiency and the higher level of risk under obligation schemes that may discourage investment in newer technologies.¹⁰⁴ Its guidelines on State aid in the field of energy and the environment advise that aid should be granted as a premium in addition to the market price from 1 January 2016 save for low-capacity/small-scale developments that may continue to receive FITs.¹⁰⁵ The 2019 RES Directive confirms the guidance by requiring Member States to support electricity from renewable sources other than small-scale and demonstration installations in the form of a market premium (Art.4(3)). In view of this, premium schemes are likely to become the dominant means of providing operating support for renewable energy during the next decade although they will continue to work alongside obligation schemes which the Commission's State aid guidelines and the 2018 RES Directive also endorse.

Competitive allocation

One of the Commission's aims in calling for a shift to subsidy schemes which give market exposure to renewable generators is to promote technological development and increasing efficiency in renewable electricity production with a view to reducing the cost of a low carbon energy transition. It further seeks to advance this aim in the 2013 State Aid Guidelines by requiring that from 1 January 2017 operating support for renewable electricity generation should be granted 'in a competitive bidding process on the basis of clear, transparent and non-discriminatory criteria' as a default position.¹⁰⁶ States are exempted from this requirement on grounds including the small scale of the supported development programme or that it would lead to higher support levels or to low project realization.⁹² Bidding processes open to all renewable electricity generators could disadvantage new technologies that have not yet been able to follow the same cost reduction and increasing efficiency pathways that established technologies such as onshore wind and solar PV have taken. In view of this, the guidelines also allow tendering to be limited to specific technologies where to do otherwise "would lead to a suboptimal result", and with a view to advancing other desirable goals for an energy transition such as the longer-term potential of new technologies and diversification in energy supplies.¹⁰⁷ In addition, aid for wind farms with an installed capacity of 6MW or 6 generating units

¹⁰⁴ Commission, 2014/C 200/01 (n 122) 25 para 126

¹⁰⁵ Ibid., para 76.

¹⁰⁶ Ibid.

¹⁰⁷ Ibid.

and for all other installations of less than 1MW and demonstration projects may be granted without a competitive bidding process.¹⁰⁸ The 2018 RES Directive entrenches the legal status of competitive allocation by advising that ‘Member States shall ensure that support for electricity from renewable sources is granted in an open, transparent, competitive, non-discriminatory and cost-effective manner’ (art.4(4)). This is subject to opt-outs for small-scale and demonstration projects and to permission for states to limit tenders to certain technologies on the same grounds as those set out in the guidelines (art.4(5)).

6.5.5 Support Schemes and the TFEU

Permission under the RES Directives for Member States to use support schemes does not mean that they have free rein to provide financial support for renewable energy as they see fit. Measures employed by Member States must be compatible with provisions of EU Treaties that enshrine principles of the internal market and that seek to prevent anti-competitive behaviour by States. Other sources present much fuller analyses than can be provided in this chapter of the complex interaction between these provisions and support schemes and of the case law of the European Court of Justice (ECJ) that interprets the relevant laws.¹⁰⁹ The following section concentrates on the two main respects in which EU Treaty law has influenced and continues to shape the design of support schemes by Member States.

Free Movement of Goods

Article 34 TFEU prohibits measures by Member States that have an equivalent effect to a quantitative restriction on imports. Schemes under which access to financial support is restricted to indigenous energy producers may contravene this provision because they limit scope for electricity to be imported. However, they may still be found to be lawful either because they fall under a derogation to Article 34 or because the ECJ finds some other basis for justifying a departure from the Article.

The *PreussenElektra* judgment of the ECJ is the leading authority on the effect of Article 34 on support schemes.¹¹⁰ This case concerned a requirement under German law that operators of grids should purchase electricity generated by plants attached to them at a fixed tariff. The ECJ found that this constituted a clear breach of Article 28 of the EC Treaty (the corresponding provision to Article 34 TFEU in its predecessor) as the preference for producers attached to the national grid restricted market access for imported electricity. The legal constraint was not permitted under the EC Treaty itself as derogations from Article 28 did not

¹⁰⁸ Ibid., para. 77.

¹⁰⁹ K. Talus, *Introduction to EU Energy Law* (Oxford: Oxford University Press, 2016); T. M. Rusche, *EU Renewable Energy Law and Policy* (Cambridge: Cambridge University Press, 2015).

¹¹⁰ Case C-379/98 *PreussenElektra v Schleswig* [2001] ECR I-2099. See A.C. Johnston and G. Block, *EU Energy Law* (Oxford: Oxford University Press, 2012), pp. 342–53 for a detailed account of the case.

include measures taken for environmental protection. Surprisingly, this remains the case under TFEU although environmental protection has a much higher profile in the EU now than it had in 2001.¹¹¹ However, the Court found that the measure could be justified because of the important public interest it served of securing the decarbonisation of energy supplies. Its reasoning was consistent with other cases in which it legitimised measures whose principal purpose is to address environmental problems that would otherwise have fallen foul of laws preventing constraints on trade.¹¹²

The ECJ was willing to endorse the restrictive law in *PreussenElektra* because of the perceived difficulty, as at 2001, with distinguishing between electricity generated from renewable and non-renewable sources. This meant that the renewable status of imported electricity could not be verified. Its decision of July 2014 in the *Ålands Vindkraft* case considers whether the subsequent introduction of arrangements for issuing documents, which confirm that electricity was produced from a renewable source (guarantees of origin¹¹³), removes this justification for measures that would otherwise contravene Article 34.¹¹⁴ The ECJ concluded that the position has not changed since its *PreussenElektra* judgment because it remains difficult to determine the origin of electricity at the point of consumption. The production of guarantees of origin does not prove that imported electricity has contributed physically to the typical objective of national support schemes of promoting the growth of renewable energy production within the State concerned.

In addition, its decision emphasizes the exclusive authority given under the Article 3(3) of the 2009 RES Directive to Member States to decide if their support schemes should be accessible to energy produced in a different State;

- The allocation of legally binding targets to each Member State including by reference to their ability to finance renewable energy development;¹¹⁵
- The corresponding importance of Member State control of the effects and costs of their support schemes according to their differing potentials;¹¹⁶ and
- The possibility for States to agree to open up their support schemes to electricity produced in other Member States under the Joint Support Scheme cooperation mechanism.¹¹⁷

¹¹¹ Derogations are listed under Article 36 TFEU. These include measures that can be justified on grounds of 'the protection of health and life of humans, animals or plants', but this falls short of a general derogation for measures taken to protect the environment.

¹¹² Johnston and Block (n 133), pp.343-50.

¹¹³ See Section 6.4.2 of this chapter.

¹¹⁴ [2014] EUECJ C-573/12, *Ålands Vindkraft AB v Energimyndigheten*, ECLI: EU: C: 2014: 2037.

¹¹⁵ See Section 6.3.2 of this chapter.

¹¹⁶ 2009 RES Directive, Recital 25

¹¹⁷ See Section 6.3.4 of this chapter.

The ECJ gave a further decision in September 2014 concerning the compatibility of an obligation/certificate scheme that restricts access to electricity produced nationally with the prohibition on measures preventing the free movement of goods.¹¹⁸ In the *Essent* case, only certificates issued for renewable electricity generated in the territory covered by the scheme could be used by suppliers to discharge their obligations. The operator fined the complainant when it attempted to meet its obligation by submitting guarantees of origin for electricity produced outside the territory within which the scheme operated. The court used the same line of reasoning employed in *Ålands Vindkraft* in concluding that the scheme, whilst it constituted a *prima facie* breach of the prohibition, could be justified because it provided a proportionate means of advancing an overriding requirement (protecting the environment by mitigating climate change).¹¹⁹ The proportionality analysis approach was endorsed and applied by the ECJ in a subsequent judgment of 2016, but with the opposite conclusion that a law discriminating in favour of domestically produced renewable electricity fed directly into distribution networks by waiving distribution charges was not proportionate.¹²⁰

State Aid

Article 107(1) TFEU declares that the grant of aid by Member States either directly or through State resources is incompatible with the common market where this would: (a) distort or threaten to distort competition by favouring certain undertakings or the production of certain goods; and (b) affect trade between Member States (for example, measures that have only an internal impact are not unlawful under this Article). Compliance with this provision is promoted by a requirement that States should provide advance notification of their intention to provide aid to the Commission so that the compatibility of proposed measures with Article 107(1) can be assessed.¹²¹ The Commission simplifies this process by waiving the notification requirement for measures that fall within specified categories of aid. These are identified in a law known as the 'General Block Exemption Regulation' that is drafted, adopted and revised periodically by the Commission. The most recent regulation came into effect on 1 July 2014.¹²²

Other sources offer a much fuller analysis than can be provided in this chapter of this complex area of EU law.¹²³ This section confines itself to consideration of the two key respects in which the articles of EU Treaties on State aid have influenced the provision of financial support for renewable energy by Member

¹¹⁸ [2014] EUECJ Case C-204/12 *Essent Belgium NV v Vlaamse Reguleringsinstanties voor de Elektriciteits en Gasmarkt*, ECLI: EU: C: 2014: 2192.

¹¹⁹ *Ibid.*, paras 77-116.

¹²⁰ [2016] EU ECJ Case C-492/4 *Essent Belgium NV v Vlaams Geweste*, EU:C: 2016: 732.

¹²¹ TFEU, Article 108.

¹²² Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories compatible with the Internal Market in application of Articles 107 and 108 of the Treaty [2014] OJ L187/1.

¹²³ J. J. Piernas Lopez, *The Concept of State Aid under EU Law: from Internal Market to Competition and Beyond* (Oxford: Oxford University Press, 2015).

States. First, the ECJ's decision in *PreussenElektra* considered whether a legal requirement by a State for transmission and distribution system operators to purchase electricity produced by renewable generating plants attached to their networks could be regarded as a measure to which Article 87 of the EC Treaty (the corresponding provision to Article 107(1) TFEU in its predecessor) would apply.¹²⁴ It concluded that this could not be regarded as State aid because the costs of the scheme were borne ultimately by consumers through the inclusion of costs for the electricity in their bills rather than being financed by the State. This decision legitimised the use of feed-in tariffs as a means of supporting renewable energy from a State aid perspective. It has not been overturned by subsequent decisions although the ECJ's decision has been criticised for excluding the use of legislative powers to require private actors to finance support schemes from the scope of Article 107(1).

Secondly, the Commission assists Member States with designing measures that do not contravene constraints on State aid. It does this by producing guidelines that indicate types of measures that are likely to be regarded as compatible with the internal market. The guidelines are not legally binding, but they inevitably have a strong influence on the form of Member State support schemes in view of the Commission's role in approving their compatibility with Article 107(1). New guidelines on State aid in the field of energy and the environment took effect on 1 July 2014.¹²⁵

The already-mentioned requirements for premium or obligation schemes to be used rather than FITs for all measures notified after 1 January 2016 and for operating support to be made available through competitive allocation will bring radical change to the way in which Member States support renewable energy.¹²⁶ The Commission's aim in proposing these changes is to further reduce the market-distorting effect of support schemes that prevent completion of the internal market.¹²⁷ It also hopes that increasing the exposure of renewable energy technologies to market conditions will require them to become more efficient with resulting reductions in the cost of energy. However, related concerns arise that greater market integration and cost reductions may be achieved at the expense of efforts to achieve a rapid decarbonisation of energy supplies.

6.6. Conclusion

The 2018 RES Directive, coupled with the 2018 Governance Regulation and the 2019 Electricity Directive and Regulation, creates a legal framework for driving further growth in renewable energy consumption in the EU to at least 32%. Member States and sectoral actors are required to create more

¹²⁴ Case C-379/98 (n 133); Johnston and Block, *EU Energy Law* (n 133), pp.351-3.

¹²⁵ Commission, 2014/C/01 (n 122).

¹²⁶ Section 6.4.2.

¹²⁷ The Commission's reasons for making these changes are explained in SWD (2013) 439 final (n 114).

favourable conditions for attracting investment in renewable energy and for its integration into energy systems and markets.

Early experience with working under the new framework has been positive in spite of the absence of legally binding national targets. Member States' proposed contributions to renewable energy growth by 2030 were assessed by the Commission to exceed the 32% goal by up to 1.7%.¹²⁸ Member States have an obligation under the Governance Regulation to take additional measures to increase the proportion of renewable energy in national consumption within one year of notification from the Commission that cumulative progress has fallen below the trajectory for reaching the EU's 32% goal.¹²⁹ Now that cumulative planned contributions exceed this level, the EU's 2030 renewable energy goal is likely to be met without Member States having taken on legally binding national targets.

However, the legal framework for the 2030 goal will receive a stiffer test if the EU's ambition for renewable energy growth increases. In this regard, the European Council agreed in December 2019 to reach net zero greenhouse gas emissions by 2050.¹³⁰ This requires a 55% reduction in greenhouse gas emissions by 2030 and a minimum rise in renewable energy to between 38% and 40%.¹³¹ Proposals for revising Clean Energy for all Europeans laws will be produced once the European Council has agreed on the level of new 2030 goals.¹³² The 2020s is therefore very likely to see further change in the EU's legal framework for renewable energy as the EU needs to transit to 'an integrated energy system largely based on renewables already by 2030' to get the Union on track for net zero by 2050.¹³³

SUGGESTED READING

BOOKS:

T. M. Rusche, *EU Renewable Electricity Law and Policy: From National Targets to a Common Market* (Cambridge University Press, 2015)

P. Crossley, *Renewable Energy Law: An International Assessment* (Cambridge University Press, 2019)

¹²⁸ Commission, 'An EU-wide Assessment of National Energy and Climate Plans: Driving forward the green transition and promoting economic recovery through integrated energy and climate planning', COM (2020) 564 final, 2-3.

¹²⁹ (EU) Regulation 2018/1999 (n 43), Article 32(3)(c)

¹³⁰ European Council, 'European Council meeting (12 December 2019) – Conclusions'. EUCO 29/19, 12 December 2019, available at [European Council conclusions, 12 December 2019 \(europa.eu\)](https://european-council.europa.eu/media/12/December/2019/Conclusions_en.pdf).

¹³¹ Commission, 'Stepping up Europe's 2030 climate ambition – Investing in a climate-neutral future for the benefit of our people', COM (2020) 562 final, 9.

¹³² Ibid., 25.

¹³³ Ibid., 18-19.

ARTICLES AND CHAPTERS

A. Martini and B. M. Romera, 'Fifty Shades of Binding: Appraising the Enforcement Toolkit for the EU's 2030 Renewable Energy Targets' (2020) 29 *Review of European, Comparative and International Environmental Law* 221

N. Caldes, P. del Rio, Y. Lechon and A. Gerbeti, 'Renewable energy cooperation in Europe: What next? Drivers and barriers to the use of cooperation mechanisms' [2019] 12 *Energies* 22

E. Webster, 'Transnational legal processes, the EU and the REDII: Strengthening the global governance of bioenergy' (2020) 29 *Review of European Comparative and International Environmental Law* 86

POLICY DOCUMENTS

Commission, 'A policy framework for climate and energy in the period from 2020 to 2030' COM (2014) 15 final

Commission, *Clean Energy for all Europeans* (Luxembourg: Publications Office of the European Union, 2019)

Commission, 'Stepping up Europe's 2030 climate ambition: Investing in a climate neutral future for the benefit of our people' COM (2020) 562 final

CLASSROOM QUESTIONS

1. How may the lack of legally binding national targets for increasing renewable energy consumption at the EU level affect achievement of the EU renewable energy 2030 target set in the 2018 RES Directive?
2. How does the 2018 RES Directive seek to: (a) promote renewable energy consumption by requiring Member States to reform administrative procedures and introduce guarantee of origin schemes; (b) deter unsustainable production of biofuels, bioliquids and biomass fuels?
3. Why does the European Commission view feed-in tariff schemes with concern? Why does it promote premium schemes, certificate/obligation schemes and competitive allocation as preferable alternatives for supporting renewable energy?